

REMARKS

The Office Action dated September 27, 2005 has been received and carefully noted. The above amendments to the claims, and the following remarks, are submitted as a full and complete response thereto.

Claims 1, 8, and 15 have been amended to more particularly point out and distinctly claim the invention. No new matter has been added. Claims 19-22 have been cancelled without prejudice or disclaimer. Claims 17 and 25 have been indicated as containing allowable subject matter. Accordingly, claims 1-18 and 23-26 are respectfully submitted for consideration.

Allowable Subject Matter

Applicants thank the Examiner for the indication that claims 17 and 25 contain allowable subject matter. Applicants respectfully submit that, in view of the arguments as to the patentability of the base claims upon which claims 17 and 25 depend, claims 17 and 25 are currently in condition for allowance.

Double Patenting, Same Invention Type, Rejections

Claims 19-22 were rejected under 35 U.S.C. 101 as claiming the same invention as claims 5-8 of U.S. Patent No. 6,535,510 (the '510 Patent). In view of the amendments to

the claims, Applicants submit that is rejection is moot. Accordingly Applicants respectfully request that this rejection be withdrawn.

Claim Objections

Claims 1-14 were objected to because claims 1 and 8 recited “sending a reference pointer to a first predetermined number of portions to a transaction queue.” The Office Action stated that the recipient of the pointer was unclear. Applicants have amended to emphasize that it is the transaction queue to which the pointer is sent, and that the pointer is to a first predetermined number of portions. Accordingly, it is respectfully submitted that this objection is moot in view of the amendments. Thus, Applicants respectfully request that these objections be withdrawn.

Rejections under 35 U.S.C. 112

Claims 1-14 were rejected under 35 U.S.C. 112, second paragraph, as being indefinite. Claims 1 and 8 recited “receiving a first portion of a data packet at a port on an ingress bus ring of the network switch fabric.” The Office Action states that it was not understood what “an ingress bus ring” was. Applicants respectfully point out that the term is explained by way of example in the Specification, beginning at page 14, paragraph 0050 and continuing to page 16, paragraph 0060, under the heading “INGRESS BUS RING.” Illustrative and exemplary functions of an ingress bus ring are provided there. It is respectfully submitted that, in view of the description in the

specification, the meaning of “ingress bus ring” is clear, and that according the elements recited in claims 1 and 8 are definite. Accordingly, Applicants respectfully request that this rejection be withdrawn.

The Office Action also states that “ingress/egress module” is unclear. Applicants respectfully point out that as described in the specification at page 17-18, paragraphs 0065-0068, the message ring includes Ingress and Egress Stations. Accordingly an ingress/egress module is a module that can perform both functions. Applicants respectfully submit that in view of the explanation provided in the Specification, the meaning of the claim term is sufficiently definite. Accordingly, Applicants respectfully request that this rejection be withdrawn.

Rejections under 35 U.S.C. 102

Claims 15-16 and 23-24 were rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,721,316 of Epps et al. (“Epps”). Applicants respectfully traverse this rejection.

Claim 15 is directed to a method of forwarding data in a network switch fabric. The method includes receiving an incoming data packet at a first port of the fabric. The method also includes reading a first packet portion, less than a full packet length, to determine particular packet information, said particular packet information including a source address and a destination address. The method further includes determining at least one egress port based on a lookup in a forwarding table. The method additionally

includes determining a class of service for the incoming data packet based on the particular packet information. The method also includes assigning data from the incoming data packet to a queue based on the at least one egress port and the class of service. The method further includes repeating the above steps for further incoming data packets and assigning data from said incoming data packets to a series of queues. The method additionally includes forwarding data packets sequentially from each queue of said series of queues.

Claim 23 is directed to a network switch fabric for forwarding data. The fabric includes means for receiving an incoming data packet at a first port of the fabric. The fabric also includes means for reading a first packet portion, less than a full packet length, to determine particular packet information, said particular packet information including a source address and a destination address. The fabric further includes means for determining at least one egress port based on a lookup in a forwarding table. The fabric additionally includes means for determining a class of service for the incoming data packet based on the particular packet information. The fabric also includes means for assigning data from the incoming data packet to a queue of a series of queues based on the at least one egress port and the class of service. The fabric further includes means for forwarding data packets sequentially from each queue of said series of queues.

As discussed in the specification, certain embodiments of the present invention are advantageously directed to a switch-on-chip solution for a self-routing fabric, capable of using ethernet, fast ethernet, and 1 gigabit and 10,000 Mbit/s ethernet systems to

achieved desired processing and forwarding of data, wherein all of the hardware is disposed on a single microchip. Certain embodiments of the present invention are configured to maximize the ability of packet-forwarding at linespeed, and also to provide a modular configuration wherein a plurality of separate modules are configured on a common chip, and wherein individual design changes to particular modules do not affect the relationship of that particular module to other modules in the system.

Claims 15 and 23 each recite, “determining at least one egress port based on a lookup in a forwarding table.” Epps does not disclose or suggest determining at least one egress port based on a lookup in a forwarding table. The Office Action takes the position that this features is taught inherently in Epps, because Epps queues packets per output ports (for which the Office Action cites col. 16, ll. 45-55) based on the lookup table at stage 440 (for which the Office Action cites col. 6, ll. 40-45).

Applicants respectfully disagree with the Office Action’s characterization of Epps. As Epps states, each packet’s destination is determined and each packet is modified to contain new routing information. Then each packet is buffered and enqueued for transmission over the switch fabric to the linecard attached to the proper destination port. **“The destination linecard may be same physical linecard as that receiving the inbound packet or a different physical linecard,”** as explained at col. 3, ll. 29-32 of Epps.

Additionally, the determination of which linecard the packet is directed to, depends on the BHDR data attached to the packet by the pipeline switch, as explained at

col. 8, l. 5, and col. 7, ll. 44-48 of Epps. The only data that is described by Epps as being included in the BHDR, however, is “an indicator showing the class of service,” as explain at col. 6, ll. 52-53. Nowhere in the creation of the BHDR is it described that it is “based on a lookup in a forwarding table.”

The Office Action takes the position that table lookup stage 440 inherently discloses this step. Epps, however, refutes the Office Action’s characterization. Epps states that this stage “walks a linked list of structures, making decisions based on information passed to it from the previous stages and collects information, e.g. which queue to send the packet to.” What Epps does not disclose or suggest is what is claimed, namely, “determining at least one egress port based on a lookup in a forwarding table.” Thus, Epps does not teach or suggest all of the elements of claims 15 and 23.

Because claims 16 and 24 depend from claims 15 and 23 and contain additional limitations, they are patentable for at least the reasons claims 15 and 23 are patentable.

Rejections under 35 U.S.C. 103(a)

Claims 18 and 26 were rejected under 35 U.S.C. 103(a) as being unpatentable over Epps, in view of no other references. Applicants respectfully traverse this rejection.

Claims 18 and 26 depend from claims 15 and 23 above. Accordingly, claims 18 and 26 are patentable over Epps for at least the reasons that claims 15 and 23 are patentable over Epps, as explained above. Additionally, Applicants respectfully submit that Epps does not provide teaching, motivation, or suggestion to modify itself, and thus

one of ordinary skill in the art would not be motivated to modify Epps to create an embodiment of the present invention. Accordingly, it is respectfully requested that this rejection be withdrawn.

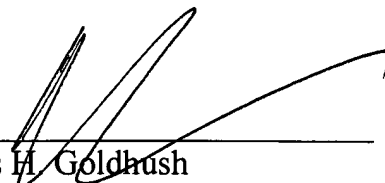
Conclusion

For the reasons explained it is respectfully submitted that each of claims 1-18 and 23-26 recites subject matter that is definite and neither disclosed nor suggested in the cited art. It is therefore respectfully requested that claims 1-18 and 23-26 be allowed and that this application be passed to issue.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, the applicants' undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, the applicant respectfully petition for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,



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